COMPARATIVE BIOCHEMISTRY AND PHYSIOLOGY

An International Journal

EDITORS: P. W. HOCHACHKA and T. P. MOMMSEN

Contents, Subject and Author Index

Volume 110, Part B, 1995

PERGAMON

COMPARATIVE BIOCHEMISTRY AND PHYSIOLOGY

☐ EDITORS

Dr P. W. Hochachka & Dr T. P. Mommsen

CBP Editorial Office, University of British Columbia, 6371 Crescent Road, Vancouver BC, Canada V6T 1Z2. Tel.: 604 228-0402; Fax: 604 228-0408

Managing Editor: Leslie Lightheart (Tel.: 604 228-0402; Fax: 604 228-0408).

☐ ASSOCIATE EDITORS

Dr Manfred Grieshaber, Institut für Tierphysiologie, Heinrich-Heine-Universität, Universitätsstr, 1, D-40225 Düsseldorf, Germany

Dr Jeffrey R. Hazel, Department of Zoology, Arizona State University, Tempe, AZ 85287, U.S.A.

Dr Hajime Ishikawa, Zoological Institute, Faculty of Science, University of Tokyo, Hongo Bunkyo-ku, Tokyo 113, Japan

Dr Kiyoaki Kuwasawa, Department of Biology, Tokyo Metropolitan University, Hachioji, Tokyo 192-03, Japan

Dr D. R. Livingstone, N.E.R.C. Plymouth Marine Laboratory, Citadel Hill, Plymouth PL1 2PB, U.K.

Dr Charlotte P. Mangum, Department of Biology, The College of William & Mary, P.O. Box 8795, Williamsburg, VA 23187-8795, U.S.A.

Dr Mikko J. Nikinmaa, Department of Zoology, Division of Physiology, University of Helsinki, P.O. Box 17, FIN-00014 Helsinki, Finland

Prof. Michael C. Thorndyke, School of Biological Sciences, Royal Holloway College, University of London, Egham, Surrey TW20 0EX, U.K.

Dr Akihisa Urano, Division of Biological Sciences, Graduate School of Science, Hokkaido University, Sapporo, Hokkaido 060, Japan

☐ CBP EDITORIAL BOARD MEMBERS

Dr V. M. F. de Almeida e Val
Manaus, Brazil

Dr J. Baldwin
Clayton, Australia

Dr R. V. Baudinette
Bedford Park, Australia

Dr S. Bhattacharya
Santiniketan, India

Dr J. H. Brackenbury
Cambridge, U.K.

Dr P. J. Butler
Birmingham, U.K.

Dr A. R. Cossins
Liverpool, U.K.

Dr P. S. Davie
Palmerston North, New Zealand

Dr F. De Pablo
Madrid, Spain

Dr W. R. Ellington
Tallahassee, U.S.A.

Dr E. Fabbri
Ferrara, Italy

Dr G. Flik
Nijmegen, The Netherlands

Prof. L. Förlin
Göteborg, Sweden

Prof. R. Fujii
Chiba, Japan

Prof. G. Gäde
Rondebosch, South Africa

Prof. N. G. Heisler
Göttingen, Germany

Dr R. B. Huey
Seattle, U.S.A.

Prof. M. Kobayashi
Hiroshima, Japan

Dr M. Krauskopf
Valdivia, Chile

Dr D. T. Manahan
Los Angeles, U.S.A.

Dr A. Meyer
Stony Brook, U.S.A.

Dr S. Morris
Sydney, Australia

Prof. T. Motokawa
Tokyo, Japan

Dr S. K. Pierce Jr
College Park, U.S.A.

Dr J. C. Rankin
Odense, Denmark

Dr L. M. Riddiford
Seattle, U.S.A.

Dr K. L. Shephard
Buckingham, U.K.

Dr J. F. Siebenaller
Baton Rouge, U.S.A.

Dr J. J. Stegeman
Woods Hole, U.S.A.

Prof. F. Tokunaga
Osaka, Japan

Dr J.-P. Truchot
Arcachon, France

Prof. A. Viarengo
Genoa, Italy

Dr C. M. Wood
Hamilton, Canada

Dr P. A. Wright
Guelph, Canada

Prof. T. Yamaguchi
Okayama, Japan

Prof. T. Yoshizawa
Osaka, Japan

Production Editor (Elsevier Science): Mary Peedell (Tel.: +44 1865 843751; Fax: +44 1865 843948).

Second Class Postage Paid at Newark, NJ. Postmaster send address corrections to Comparative Biochemistry and Physiology Part B, c/o Elsevier Science Inc., 660 White Plains Road, Tarrytown, NY 10591-5153, U.S.A.

Copyright © 1995 Elsevier Science Ltd

European Society for Comparative Physiology & Biochemistry

Japanese Society for Comparative Physiology & Biochemistry

Canadian Society for Zoology Comparative Physiology & Biochemistry Section

SEB
THE SOCIETY FOR EXPERIMENTAL BIOLOGY

CONTENTS OF 110B

Vol. 110B, No. 1

Editorial Note 1

Invited Review

A. J. Flavell 3 Retroelements, reverse transcriptase and evolution

General Papers

G. D. Baldridge and A. M. Fallon 17 Evidence for DNA endonuclease activity in nuclear extracts from mosquito cells

I. Serino, P. Monteleone and M. d'Istria 33 Effects of gonadectomy and temperature on the *N*-acetyltransferase activity in the Harderian gland of the green frog *Rana esculenta*

I. Baumgarten and E. H. Harley 37 Uptake of purine substrates shows major physiological variations in mammalian skin fibroblasts

M. Kouba, D. Hermier and M.-A. Bernard-Griffiths 47 Comparative study of hepatic VLDL secretion *in vivo* in the growing turkey (*Meleagris gallopavo*) and chicken (*Gallus domesticus*)

B. Darvas, H. H. Rees, N. Hoggard, A. I. Farag, G. O'Hanlon and J. Mercer 57 Effects of wet environment on ecdysone 20-mono-oxygenase and ecdysteroid levels during wandering behaviour of *Neobellieria bullata* and *Parasarcophaga argyrostoma* larvae

H. Komnick and D. Wachtmann 65 Intestinal absorption of radioactive long-chain saturated fatty acids by the larval dragon-fly *Aeshna cyanea* and co-absorptive effects of other stable fatty acids

J. C. Groppe and D. E. Morse 75 Sequence-independent detection of gene family homologs: identification of a transcript encoding a molluscan serine protease homologous to the pancreatic enzymes of vertebrates

A. Chaim-Matyas, G. Borkow and M. Ovadia 83 Synergism between cytotoxin P4 from the snake venom of *Naja nigricollis nigricollis* and various phospholipases

E. M. Martín-Valmaseda, J. Sánchez-Yagüe, J. A. Cabezas and M. Llanillo 91 Biochemical characterization of sheep platelet acetylcholinesterase after detergent solubilization

G. Isani, O. Cattani, M. Zurzolo, C. Pagnucco and P. Cortesi 103 Energy metabolism of the mussel, *Mytilus galloprovincialis*, during long-term anoxia

D. L. Lovett and S. A. Watts 115 Changes in polyamine levels in response to acclimation salinity in gills of the blue crab *Callinectes sapidus* Rathbun

E. C. W. Leong and S. H. Ho 121 *In vitro* inhibition of esterase activity in *Liposcelis bostrychophila* Bad. and *L. entomophila* (End.) (Psocoptera: Liposcelididae)

R. Stradi, G. Celentano, E. Rossi, G. Rovati and M. Pastore 131 Carotenoids in bird plumage—I. The carotenoid pattern in a series of Palearctic Carduelinae

H. Yuan, T. Kaneko, K. Kaji, H. Kondo and M. Matsuo 145 Species difference in the resistibility of embryonic fibroblasts against oxygen-induced growth inhibition

E. M. Dotson, J.-L. Connat and P. A. Diehl 155 Ecdysteroid titre and metabolism and cuticle deposition during embryogenesis of the ixodid tick *Amblyomma hebraeum* (Koch)

N. Jayanthi Rao and V. Jagadeesan 167 Effect of long term iron deficiency on the activities of hepatic and extra-hepatic drug metabolising enzymes in Fischer rats

H. Devaraj, D. Senthil Kumar, J. Thanislass and S. Niranjali	175	Isolation and characterization of high molecular weight glycoproteins from embryonated eggs of *Emerita asiatica*
I. L. Klingenberg, D. A. Knabe and S. B. Smith	183	Lipid metabolism in pigs fed beef tallow or high-oleic acid sunflower oil
Y. Enoki, K. Matsumura, Y. Ohga, H. Kohzuki and M. Hattori	193	Oxygen affinities (P_{50}) of myoglobins from four vertebrate species (*Canis familiaris*, *Rattus norvegicus*, *Mus musculus* and *Gallus domesticus*) as determined by a kinetic and an equilibrium method
J. Nagaraju and E. G. Abraham	201	Purification and characterization of digestive amylase from the tasar silkworm, *Antheraea mylitta* (Lepidoptera: Saturniidae)
W. W. Muhonen and D. O. Lambeth	211	The compartmentation of nucleoside diphosphate kinase in mitochondria
N. Matsuoka, K. Kohyama and H. Asano	225	Genetic distance and enzyme variation in local populations of two echinoderms from Japanese waters
J. Gill	235	Serum lysozyme level in the European bison, *Bison bonasus* (L.)
M. A. Faiz, J. B. Harris, C. A. Maltin and D. Mantle	241	Comparison of structural protein and proteolytic enzyme levels in degenerating and regenerating rat muscle induced by *Notechis scutatus* venom
J. T. Bradley, M. Masetti, A. Cecchettini and F. Giorgi	255	Vitellogenesis in the allatectomized stick insect *Carausius morosus* (Br.) (Phasmatodea: Lonchodinae)
M. J. Bakes and P. D. Nichols	267	Lipid, fatty acid and squalene composition of liver oil from six species of deep-sea sharks collected in southern Australian waters
T. Obata, H. Hosokawa, T. Soeda, K. Karashima, Y. Uchida and Y. Yamanaka	277	Myocardial microdialysis of salicylic acid to detect hydroxyl radical generation during ischemia
	i	Comparative Biochemistry and Physiology B Bibliography

Vol. 110B, No. 2

Mini Review

M. J. Lehane, D. Blakemore, S. Williams and M. R. Moffatt	285	Regulation of digestive enzyme levels in insects

General Papers

M. R. Moffatt, D. Blakemore and M. J. Lehane	291	Studies on the synthesis and secretion of trypsin in the midgut of *Stomoxys calcitrans*
D. Blakemore, S. Williams and M. J. Lehane	301	Protein stimulation of trypsin secretion from the opaque zone midgut cells of *Stomoxys calcitrans*
Zdzisław Kochan, Joanna Karbowska, Grzegorz Bukato and Julian Świerczyński	309	Comparative studies on $NADP^+$-linked malic enzyme in the central nervous system of ectothermic and endothermic animals
Bjarni Ásgeirsson, Ralf Hartemink and Jan F. Chlebowski	315	Alkaline phosphatase from Atlantic cod (*Gadus morhua*). Kinetic and structural properties which indicate adaptation to low temperatures
Takao Yora, Yoshikatsu Sakagishi and Hiroaki Nakamura	331	Comparative biochemical study of coated vesicles purified from cock brains

M. Tariq Khan and M. Saleemuddin	339	Unlike its human counterpart, band 3 anion exchange protein from goat erythrocyte membrane shows a lack of reactivity against various -SH oxidants and protease treatments
José Luis Camejo, Teresa Proverbio and Fulgencio Proverbio	345	Ouabain-insensitive, Na^+-stimulated ATPase activity in rabbit cardiac sarcolemma
Primitivo Barja and Manuel Freire	349	Markers of T-cell differentiation and maturation in C57BL/6 and BALB/c mice and in the calf: a comparative study
Premjit P. Halarnkar and David A. Schooley	357	A comparative catabolism study of isoleucine by insect and mammalian tissues
Masahiro Ogawa, Toru Tamiya and Takahide Tsuchiya	367	Thermal stability of α-helical structure of fish myosin rods
Olga N. Lukyanova and Yury S. Khotimchenko	371	Lipid peroxidation in organs of the scallop *Mizuhopecten yessoensis* and sea-urchin *Strongylocentrotus intermedius* during the reproductive cycle
Michael J. Lee and John H. Anstee	379	Phenoloxidase and its zymogen from the haemolymph of larvae of the lepidopteran *Spodoptera littoralis* (Lepidoptera: Noctuidae)
Peter F. Zagalsky, Rosemary S. Mummery and Larry A. Winger	385	Cross-reactivities of polyclonal antibodies to subunits, CRTA and CRTC, of the lobster carapace carotenoprotein, α-crustacyanin, and of monoclonal antibodies to human serum retinol-binding protein against carotenoproteins of different types and from separate invertebrate species
Peter F. Zagalsky, Rosemary S. Mummery, Elias E. Eliopoulos and Jeffrey N. Keen	393	Crustacyanin, the lobster carapace astaxanthin-protein: effects of modification of tyrosine residues of apocrustacyanin with tetranitromethane on the ability of the protein to reconstitute with astaxanthin
Antonella Franchini, Paolo Fontanili and Enzo Ottaviani	403	Invertebrate immunocytes: relationship between phagocytosis and nitric oxide production
Jerry Eichler, Nicola Tolliday, Lilly Toker and Israel Silman	409	Purification and characterization of HSP70 proteins from *Torpedo* electric organ
Max H. Cake, Glen W. Power and Ian C. Potter	417	The liver and muscle of early upstream migrant lampreys (*Geotria australis*) contain high levels of acetyl–CoA carboxylase and a carnitine palmitoyl transferase I that is sensitive to malonyl–CoA
Andrzej Lesicki	425	Regulation of phosphofructokinase activity in the midgut gland of the crayfish *Orconectes limosus* Raf. (Crustacea: Decapoda) by fructose 2,6-bisphosphate
Mahmood Vessal and Masih Taher	431	Partial purification and kinetic properties of human placental cytosolic aspartate transaminase
Charlotte Wallaert and Patrick J. Babin	439	Frozen storage affects high density lipoproteins and the quantitation of trout (*Oncorhynchus mykiss*) lipoprotein classes as separated by ultracentrifugation
K. Richardson and J. C. Jamieson	445	Release of sialyltransferases from rat liver Golgi membranes by a cathepsin D-like proteinase: comparison of the release of Galβ1–4GlcNAcα2–6 sialyltransferase, Galβ1–3(4)GlcNAcα2–3 sialyltransferase and lactosylceramide α2–3 sialyltransferase (SAT-1)
Dragoslava Živadinović and R. K. Andjus	451	*In vitro* and *in vivo* thermal activation of steroid–receptor complexes from rats and ground squirrels (*Spermophilus citellus*)

463 Announcements

i Comparative Biochemistry and Physiology B Bibliography

Vol. 110B, No. 3

Mini Review

S. G. Miller and D. L. Silhacek — 467 Riboflavin binding proteins and flavin assimilation in insects

General Papers

I. V. Grigolava and J. D. McKenzie — 477 Carbodiimide-induced labelling of sea urchin surfaces (Echinoidea, Echinodermata)

P. W. Pemberton, R. W. Lobley, R. Holmes, S. H. Sørensen, K. W. Simpson and R. M. Batt — 483 Characterization of microvillar membrane proteins of dog small intestine by two-dimensional electrophoresis

G. M. Wessel, F. Clark and L. Berg — 493 A diversity of enzymes involved in the regulation of reversible tyrosine phosphorylation in sea urchin eggs and embryos

S. Rönkkö — 503 Immunohistochemical localization of phospholipase A_2 in human and bovine male reproductive organs

S. L. Steen Law, C. A. Squier and P. W. Wertz — 511 Free sphingosines in oral epithelium

T. T. Herskovits, M. D. Edwards and M. G. Hamilton — 515 The hemocyanin of the Californian black sea hare, *Aplysia vaccaria* Winkler

C. M. Brack, Wei Duan, A. J. Hulbert and G. Schreiber — 523 Wallaby transthyretin

R. Johnson, G. Bulfield, A. Tait and C. Goddard — 531 Increased expression and activity of ornithine decarboxylase in chicks genetically selected for rapid growth rate

K. Tanaka — 539 Seasonal change in glycogen and inositol/sorbitol contents of the house spider, *Achaearanea tepidariorum* (Araneae: Theridiidae)

B. Aaen, F. Jessen and B. Jensen — 547 Partial purification and characterization of a cellular acidic phospholipase A_2 from cod (*Gadus morhua*) muscle

S. Corey Specht, R. Lopez-Rosado, C. Santos-Berrios and R. Figueroa-Nieves — 555 An ouabain-sensitive Na^+,K^+-ATPase in tentacles of the sea anemone *Stichodactyla helianthus*

C. Gielens, L. Declercq and G. Préaux — 565 Limited proteolysis of the haemocyanin of the gastropod *Pila leopoldvillensis*. Isolation and characterization of the fragments

F. San Juan Serrano, M. Fernandez Gonzalez, J. L. Sanchez Lopez and L. O. García Martín — 577 Molecular mechanism of the control of glycogenolysis by calcium ions and cyclic AMP in the mantle of *Mytilus galloprovincialis* Lmk

M. Paolucci and I. P. Callard — 583 Distribution and characterization of apolipoproteins in *Chrysemys picta* plasma

L. C. Hoffman, J. F. Prinsloo, J. Theron and N. H. Casey — 589 The genotypic influence of four strains of *Clarias gariepinus* on the larvae body proximate, total lipid fatty acid, amino acid and mineral compositions

S. Kayada, O. Hisatomi and F. Tokunaga — 599 Cloning and expression of frog rhodopsin cDNA

A. Minelli, P. Miscetti, A. Proietti, L. Luzi and I. Mezzasoma — 605 Adenosine triphosphate catabolism in bovine spermatozoa

G. G. Gadelhak, V. K. Pedibhotla, R. M. T. Rosario, G. D. Thomas and D. W. Stanley-Samuelson — 613 The influence of blood meals on accumulation of arachidonic acid by adult stable flies

K. Salehi-Ashtiani and E. Goldberg — 623 Expression profile of *Ldh-a* in the developing rat (*Rattus norvegicus*) testis suggests regulation at the translational level

E. V. Berdyshev, V. E. Vaskovsky and M. A. Vaschenko — 629 Sea urchins—a new model for PAF research in embryology

T. A. Davis, H. V. Nguyen, D. P. Costa and P. J. Reeds — 633 Amino acid composition of pinniped milk

C. S. Burks and M. S. Fuchs — 641 Partial purification of plasma phenoloxidase of the yellow fever mosquito *Aedes aegypti* L. (Diptera: Culicidae)

V. Talesa, M. Grauso, G. B. Principato, E. Giovannini and G. Rosi — 649 Cholinesterase in *Helix pomatia* (Gastropoda: Stylommatophora): presence of a soluble (hemolymph) and a membrane-bound form

657 Announcements

i Comparative Biochemistry and Physiology B Bibliography

Vol. 110B, No. 4

Mini Review

R. I. Samuels and I. C. Paterson — 661 Cuticle degrading proteases from insect moulting fluid and culture filtrates of entomopathogenic fungi

General Papers

K. Grzelak — 671 Control of expression of silk protein genes

P. B. Danielson, J. A. Letman and J. C. Fogleman — 683 Alkaloid metabolism by cytochrome P-450 enzymes in *Drosophila melanogaster*

S. Brennan, J. Holder and J. Baldwin — 689 An unusual fructose 1,6-bisphosphate-activated lactate dehydrogenase from the ascidian *Pyura stolonifera*

R. Sutton, W. G. Ward, K. A. Raphael and G. R. Cam — 697 Growth factor expression in skin during wool follicle development

M. M. Kristjánsson, S. Guðmundsdóttir, J. W. Fox and J. B. Bjarnason — 707 Characterization of a collagenolytic serine proteinase from the Atlantic cod (*Gadus morhua*)

M. Tsushima, M. Byrne, S. Amemiya and T. Matsuno — 719 Comparative biochemical studies of carotenoids in sea urchins—III. Relationship between developmental mode and carotenoids in the Australian echinoids *Heliocidaris erythrogramma* and *H. tuberculata* and a comparison with Japanese species

Hong Chen and F. Leibenguth — 725 Restriction patterns of mitochondrial DNA in European wild boar and German Landrace

K. Beers, B. Fried, T. Fujino and J. Sherma — 729 Effects of diet on the lipid composition of the digestive gland-gonad complex of *Biomphalaria glabrata* (Gastropoda) infected with larval *Echinostoma caproni* (Trematoda)

M. Matusiewicz and K. Dabrowski — 739 Characterization of ascorbyl esters hydrolysis in fish

M. A. Carrasco and S. Figueroa — 747 Inositol 1,4,5-trisphosphate 3-kinase activity in frog skeletal muscle

M. Sakai, M. Kobayashi and T. Yoshida — 755 Activation of rainbow trout, *Oncorhynchus mykiss*, phagocytic cells by administration of bovine lactoferrin

S. Stoeva, R. Rachev, S. Severov, W. Voelter and N. Genov	761	Carbohydrate content and monosaccharide composition of *Rapana thomasiana grosse* (Gastropoda) hemocyanin and its structural subunits. Comparison with gastropodan hemocyanins
M. S. González, O. J. Rimoldi and R. R. Brenner	767	Studies on very-high-density lipoprotein of *Triatoma infestans* hemolymph in relation to its function as free fatty acid carrier
P. Le Chevalier, D. Sellos and A. Van Wormhoudt	777	Purification and partial characterization of chymotrypsin-like proteases from the digestive gland of the scallop *Pecten maximus*
K. Mominoki, N. Nakagawa-Tosa, M. Morimatsu, B. Syuto and M. Saito	785	Haptoglobin in Carnivora: a unique molecular structure in bear, cat and dog haptoglobins
M. Hajjou, A. Smine, F. Guerard and Y. Le Gal	791	Purification and some properties of a carboxypeptidase B from dogfish *Scyliorhinus canicula*
G. Murugan, H. J. Nelis, H. J. Dumont and A. P. De Leenheer	799	*Cis*- and all-*trans*-canthaxanthin levels in fairy shrimps
U. Zölzer and H. O. von Hagen	805	Amino acid sequences of P1 protamines and the phylogeny of eutherian mammals: a cladistic study
S. Umeki	817	Anti-inflammatory action of gentamycin through inhibitory effect on neutrophil NADPH oxidase activity
	823	Corrigendum
	825	Announcements
	i	Comparative Biochemistry and Physiology B Bibliography
	I	Volume Contents, Subject and Author Index for Volume 110B